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7590

06/29/2004

Casey August
Intellectual Property Law Dept.
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EXAMINER

PHAM, KHANH B

ART UNIT

PAPER NUMBER

2177

DATE MAILED: 06/29/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,089	07/24/2001	Carl Binding	CH919990053	5546

TITLE OF INVENTION: METHOD OF EXTERNALIZING RELATIONAL AND ASN.1-FORMATTED DATA INTO XML FORMAT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1330	\$300	\$1630	09/29/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

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B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

☐ Applicant claims SMALL ENTITY status.
See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

21

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7590 06/29/2004

Casey August
Intellectual Property Law Dept.
IBM Corporation
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Yorktown Heights, NY 10598

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,089	07/24/2001	Carl Binding	CH919990053	5546

TITLE OF INVENTION: METHOD OF EXTERNALIZING RELATIONAL AND ASN.1-FORMATTED DATA INTO XML FORMAT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1330	\$300	\$1630	09/29/2004

EXAMINER	ART UNIT	CLASS-SUBCLASS
PHAM, KHANH B	2177	707-101000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1	_____
2	_____
3	_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent); ☐ individual ☐ corporation or other private group entity ☐ government

4a. The following fee(s) are enclosed:

- ☐ Issue Fee
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- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

Director for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature)

(Date)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Alexandria, Virginia 22313-1450.

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09/912,089	07/24/2001	Carl Binding	CH919990053	5546
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Casey August Intellectual Property Law Dept. IBM Corporation P.O. Box 218 Yorktown Heights, NY 10598			EXAMINER PHAM, KHANH B	
			ART UNIT 2177	PAPER NUMBER

DATE MAILED: 06/29/2004

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 472 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 472 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability

Application No.

09/912,089

Examiner

Khanh B. Pham

Applicant(s)

BINDING ET AL.

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 4/14/2004.
2. ☒ The allowed claim(s) is/are 4-10, 12-14, 19-25 and 27-32, now re-numbered as 1-26.
3. ☒ The drawings filed on 24 July 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

6/8

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicant's representative, Mr. David Aker, on Jun 23, 2004.

The application has been amended as follows:

In the title: Pursuant to MPEP 606.01, the title has been changed to read:

**-- METHOD OF EXTERNALIZING LEGACY DATABASE IN ASN.1-FORMATTED
DATA INTO XML FORMAT --**

In the claims:

The claims have been amended as follow: (See next pages)

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LISTING OF AND AMENDMENTS TO CLAIMS:

1. - 3. (Canceled)

4. (currently amended) A method of mapping data formatted according to ~~either of a group consisting of a relational database model and an~~ Abstract Syntax Notation ("ASN.1") data model into an Extensible Markup Language ("XML") compliant data format, the method including an exploration/adaptation step for exploration of legacy data in a legacy database on a data resource, and a production step for generation of XML data out of the legacy data, wherein the method performs data format mapping between the legacy database and an XML-compliant representation of that data, and wherein the data format mapping takes ASN.1 constructs, and performs the following steps:

(a) mapping primitive ASN.1 types onto XML entities containing character data, wherein, for each primitive ASN.1 type, one entity is defined;

(b) redefining fields of ASN.1 constructs, which are of a primitive ASN.1 type, as XML elements with an attribute of the corresponding entity;

(c) mapping the ASN.1 ANY type onto an XML entity containing uninterpreted data;

(d) mapping ASN.1 constants onto XML entities;

(e) mapping the ASN.1 SEQUENCE construct onto an XML element containing individual elements of the SEQUENCE as an XML sequence, wherein the XML "?" operator is applied to optional ASN.1 elements;

(f) mapping the ASN.1 SEQUENCE OF construct onto the XML repetition construct of elements "*";

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(g) mapping the ASN.1 SET construct onto the XML CHOICE construct, wherein the XML "?" operator is applied to optional ASN.1 elements in a SET;

(h) mapping the ASN.1 SET OF construct onto the XML repetition construct of "*";

(i) mapping the ASN.1 CHOICE construct onto an XML element containing individual elements of the CHOICE as XML alternatives by using the "|" operator;

(j) mapping the ASN.1 COMPONENTS OF construct as follows:

for every COMPONENTS OF construct, creating an XML element which contains individual component elements, wherein the COMPONENTS OF optionally has an attribute that refers to the contained construct; and

(k) mapping each ASN.1 module having certain contents onto a specific XML Document Type Description by recursively applying the above rules to the module's contents, wherein each Document Type Description forms a separate name space and the ASN.1 constructs IMPORT and EXPORT are then modeled using qualified names for imported/exported XML elements, thus creating an XML specification.

2/ 5. (original) The method of claim 4, wherein in the exploration step, standardized database functions are used to retrieve information on a database's data scheme.

3/ 6. (original) The method of claim 4 wherein the data format mapping is automated between legacy databases and an XML-compliant representation of that data.

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4. (previously presented) The method of claim 3, wherein the data format mapping covers all ASN.1 constructs, both primitive and composite.

5. (previously presented) The method of claim 4 wherein an XML Document Type Definition conversion between either of the group and an XML-compliant format is made.

6. (currently amended) A method that automates the data format mapping between data in a legacy database on a data resource formatted according to ~~one member of a group selected from relational databases modeled according to a relational~~ an Abstract Syntax Notation (ASN.1) data model and Extensible Markup Language ("XML")-compliant representations of that data, wherein the method comprises:

(1) an exploration/adaptation step for exploration of the data resource, and

(2) a mapping step for generation of XML data out of the legacy data, wherein the data format mapping takes ASN.1 constructs, and performs the following steps:

(a) mapping primitive ASN.1 types onto XML entities containing character data, wherein, for each primitive ASN.1 type, one entity is defined;

(b) redefining fields of ASN.1 constructs, which are of a primitive ASN.1 type, as XML elements with an attribute of the corresponding entity;

(c) mapping the ASN.1 ANY type onto an XML entity containing uninterpreted data;

(d) mapping ASN.1 constants onto XML entities;

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(e) mapping the ASN.1 SEQUENCE construct onto an XML element containing individual elements of the SEQUENCE as an XML sequence, wherein the XML "?" operator is applied to optional ASN.1 elements;

(f) mapping the ASN.1 SEQUENCE OF construct onto the XML repetition construct of elements "*";

(g) mapping the ASN.1 SET construct onto the XML CHOICE construct, wherein the XML "?" operator is applied to optional ASN.1 elements in a SET;

(h) mapping the ASN.1 SET OF construct onto the XML repetition construct of "*";

81 (i) mapping the ASN.1 CHOICE construct onto an XML element containing individual elements of the CHOICE as XML alternatives by using the "|" operator;

(j) mapping the ASN.1 COMPONENTS OF construct as follows:

for every COMPONENTS OF construct, creating an XML element which contains individual component elements, wherein the COMPONENTS OF optionally has an attribute that refers to the contained construct; and

(k) mapping each ASN.1 module having certain contents onto a specific XML Document Type Description by recursively applying the above rules to the module's contents, wherein each Document Type Description forms a separate name space and the ASN.1 constructs IMPORT and EXPORT are then modeled using qualified names for imported/exported XML elements, thus creating an XML specification.

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Art Unit: 2177

¹⁰10. (currently amended) The method of claim ⁹9 wherein the mapping step includes the following substeps:

(l) [[(a)]] mapping relations within the relational data model onto XML elements including a "table" and a "row" element;

(m) [[(b)]] mapping tuples within a relation onto XML elements which are nested within the XML "table" element; and

(n) [[(c)]] mapping attributes of tuples onto XML elements which are nested within the XML "row" element.

11. Canceled

^{B1} ¹¹12. (previously presented) The method of claim ⁹9, wherein in order to perform a lossless mapping onto XML, further inserting ASN.1 tags into the XML specification by including one TAG element and three TAG attributes in the XML specification.

¹²13. (original) The method of claim ¹¹12, wherein the XML TAG elements use an attribute to indicate their policy, their nature, and value of the tag and wherein, an additional attribute indicates whether IMPLICIT or EXPLICIT ASN.1 tagging has been used.

^{B3} ¹²14. (previously presented) The method of claim ¹²13 wherein additional attributes are included in the XML specification, wherein XML tag attributes in a separate name-space Abstract Syntax Notation are ASN:policy, ASN:class, and ASN:tag containing the original ASN.1 tag value.

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Art Unit: 2177

15. - 18. (Canceled)

14 18. (currently amended) A computer-readable medium encoded with a method of mapping data formatted according to either ~~of a group consisting of a relational database model and an~~ Abstract Syntax Notation ("ASN.1") data model into an Extensible Markup Language ("XML") compliant data format, the method including an exploration/adaptation step for exploration of legacy data in a legacy database on a data resource, and a production step for generation of XML data out of the legacy data, wherein the method performs data format mapping between the legacy database and an XML-compliant representation of that data, and wherein the format mapping takes ASN.1 constructs, and performs the following steps:

(a) mapping primitive ASN.1 types onto XML entities containing character data, wherein, for each primitive ASN.1 type, one entity is defined;

(b) redefining fields of ASN.1 constructs, which are of a primitive ASN.1 type, as XML elements with an attribute of the corresponding entity;

(c) mapping the ASN.1 ANY type onto an XML entity containing uninterpreted data;

(d) mapping ASN.1 constants onto XML entities;

(e) mapping the ASN.1 SEQUENCE construct onto an XML element containing individual elements of the SEQUENCE as an XML sequence, wherein the XML "?" operator is applied to optional ASN.1 elements;

(f) mapping the ASN.1 SEQUENCE OF construct onto the XML repetition construct of elements "*";

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(g) mapping the ASN.1 SET construct onto the XML CHOICE construct, wherein the XML "?" operator is applied to optional ASN.1 elements in a SET;

(h) mapping the ASN.1 SET OF construct onto the XML repetition construct of "*";

(i) mapping the ASN.1 CHOICE construct onto an XML element containing individual elements of the CHOICE as XML alternatives by using the "|" operator;

(j) mapping the ASN.1 COMPONENTS OF construct as follows:

for every COMPONENTS OF construct, creating an XML element which contains individual component elements, wherein the COMPONENTS OF optionally has an attribute that refers to the contained construct; and

(k) mapping each ASN.1 module having certain contents onto a specific XML Document Type Description by recursively applying the above rules to the module's contents, wherein each Document Type Description forms a separate name space and the ASN.1 constructs IMPORT and EXPORT are then modeled using qualified names for imported/exported XML elements, thus creating an XML specification.

15/20. (original) The medium of claim 14, wherein in the exploration step, standardized database functions are used to retrieve information on a database's data scheme.

16/21. (original) The medium of claim 14 wherein the data format mapping is automated between legacy databases and an XML-compliant representation of that data.

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¹⁷ 22. (previously presented) The medium of claim ¹⁶ 21, wherein the data format mapping covers all ASN.1 constructs, both primitive and composite.

²¹ 23. (previously presented) The medium of claim ¹⁴ 17 wherein an XML Document Type Definition conversion between either of the group and an XML-compliant format is made.

²² 24. (currently amended) A medium that automates the data format mapping between data in a legacy database on a data resource formatted according to an Abstract Syntax Notation ~~one member of a group selected from relational databases modeled according to a relational data model~~ and Extensible Markup Language ("XML")-compliant representations of that data, wherein the method comprises:

an exploration/adaptation step for exploration of the data resource, and

a mapping step for generation of XML data out of the legacy data, and wherein the format mapping takes ASN.1 constructs, and performs the following steps:

(a) mapping primitive ASN.1 types onto XML entities containing character data, wherein, for each primitive ASN.1 type, one entity is defined;

(b) redefining fields of ASN.1 constructs, which are of a primitive ASN.1 type, as XML elements with an attribute of the corresponding entity;

(c) mapping the ASN.1 ANY type onto an XML entity containing uninterpreted data;

(d) mapping ASN.1 constants onto XML entities;

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(e) mapping the ASN.1 SEQUENCE construct onto an XML element containing individual elements of the SEQUENCE as an XML sequence, wherein the XML "?" operator is applied to optional ASN.1 elements;

(f) mapping the ASN.1 SEQUENCE OF construct onto the XML repetition construct of elements "*";

(g) mapping the ASN.1 SET construct onto the XML CHOICE construct, wherein the XML "?" operator is applied to optional ASN.1 elements in a SET;

(h) mapping the ASN.1 SET OF construct onto the XML repetition construct of "*";

(i) mapping the ASN.1 CHOICE construct onto an XML element containing individual elements of the CHOICE as XML alternatives by using the "|" operator;

(j) mapping the ASN.1 COMPONENTS OF construct as follows:

for every COMPONENTS OF construct, creating an XML element which contains individual component elements, wherein the COMPONENTS OF optionally has an attribute that refers to the contained construct; and

(k) mapping each ASN.1 module having certain contents onto a specific XML Document Type Description by recursively applying the above rules to the module's contents, wherein each Document Type Description forms a separate name space and the ASN.1 constructs IMPORT and EXPORT are then modeled using qualified names for imported/exported XML elements, thus creating an XML specification.

23 25. (currently amended) The medium of claim 24²² wherein the mapping step includes the following substeps:

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(1) ~~[[a]]~~ mapping relations within the relational data model onto XML elements including a "table" and a "row" element;

(m) ~~[[b]]~~ mapping tuples within a relation onto XML elements which are nested within the XML "table" element; and

(n) ~~[[c]]~~ mapping attributes of tuples onto XML elements which are nested within the XML "row" element.

26. Canceled

24 27. (previously presented) The medium of claim ²²24 wherein, in order to perform a lossless mapping onto XML, further inserting ASN.1 tags into the XML specification by including one TAG element and three TAG attributes in the XML specification.

25 28. (original) The medium of claim ²⁴27, wherein the XML TAG elements use an attribute to indicate their policy, their nature, and value of the tag and wherein, an additional attribute indicates whether IMPLICIT or EXPLICIT ASN.1 tagging has been used.

26 29. (previously presented) The medium of claim ²⁵28 wherein additional attributes are included in the XML specification, wherein XML tag attributes in a separate name-space Abstract Syntax Notation are ASN:policy, ASN:class, and ASN:tag containing the original ASN.1 tag value.

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Art Unit: 2177

6 30. (previously presented) The method of claim ¹4, wherein in order to perform a lossless mapping onto XML, further inserting ASN.1 tags into the XML specification by including one TAG element and three TAG attributes in the XML specification.

7 31. (previously presented) The method of claim ⁶30, wherein the XML TAG elements use an attribute to indicate their policy, their nature, and value of the tag and wherein, an additional attribute indicates whether IMPLICIT or EXPLICIT ASN.1 tagging has been used.

8 32. (previously presented) The method of claim ⁷31, wherein additional attributes are included in the XML specification, wherein XML tag attributes in a separate name-space Abstract Syntax Notation are ASN:policy, ASN:class, and ASN:tag containing the original ASN.1 tag value.

81 10 33. (previously presented) The medium of claim ¹⁴19, wherein in order to perform a lossless mapping onto XML, further inserting ASN.1 tags into the XML specification by including one TAG element and three TAG attributes in the XML specification.

19 34. (previously presented) The medium of claim ¹⁸33, wherein the XML TAG elements use an attribute to indicate their policy, their nature, and value of the tag and wherein, an additional attribute indicates whether IMPLICIT or EXPLICIT ASN.1 tagging has been used.

β

²⁰35. (previously presented) The medium of claim ¹⁹~~34~~ wherein additional attributes are included in the XML specification, wherein XML tag attributes in a separate name-space Abstract Syntax Notation are ASN:policy, ASN:class, and ASN:tag containing the original ASN.1 tag value.

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Allowable Subject Matter

2. Claims 4-10, 12-14, 19-25, 27-32 are allowed. (Renumbered as 1-26).
3. The following is an examiner's statement of reasons for allowance:

Prior art of record do not teach combination of claimed elements including the combination of steps from (a) to (k), with specific detail for each step as claimed in independent claims 4, 9, 19 and 24. Turau teaches a method for mapping relational database to XML but do not teach mapping from ASN.1 to XML. Sue teaches a method for mapping ASN.1 to XML, but does not describes the detail steps from (a) to (k) as claimed. Thus, prior art of record neither renders obvious nor anticipates the combination of claimed elements in light of the specification. After a further search and a thorough examination of the present application and in light of the prior art made of record, independent claims 4, 9, 19 and 24 are allowed. Dependent claims 5-8, 10, 12-14, 20-23, 25, 27-32 are allowed at least by virtue of their dependencies from their pertinent independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (703) 308-

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Art Unit: 2177


7299. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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KBP
Jun 23, 2004


SRIRAMA CHANNARAYANA
PRIMARY EXAMINER

